

REMARKS

Applicants appreciate the Examiner's thorough examination of the subject application and request reconsideration of the subject application based on the foregoing amendments and the following remarks.

Claims 17-25 are pending in the subject application. Claims 17 and 19 are withdrawn from consideration as the result of an Examiner's earlier restriction requirement. In view of the Examiner's earlier restriction requirement, Applicants reserve the right to present the above-identified withdrawn claims in a divisional application.

Claims 18 and 20-25 stand rejected under 35 U.S.C. §103. Claims 23 and 24 also were objected to because of identified informalities.

Claim 18 was amended for clarity. Claims 23 and 24 were amended as suggested by the Examiner to address the Examiner's objections. Claim 25 was amended as suggested in the Examiner's Comments. The amendments to the claims are supported by the originally filed disclosure.

An objection was raised as to drawing figures 8-10 and correction required. Amended drawing figures are being submitted herewith that address the drawing objections. The amendments to the drawing figures do not introduce new matter because they either are editorial in nature or are supported by the originally filed disclosure.

35 U.S.C. §102 REJECTIONS

The Examiner rejected claims 18 and 20-25 under 35 U.S.C. §102(a) as being anticipated by Aratani [WO99/39342] as evidenced by Applicants' admissions. The Office Action, however, does make specific reference to the figures and columns of USP 6,573,957, also to Aratani, because it is the US equivalent of the PCT publication. In the Office Action it is asserted that the claimed functional limitations are deemed to be inherent characteristics of the prior art since the prior art is substantially identical in composition and / or structure. It is further noted that Figure 2 of the reference shows that the domain wall of the medium does not enter the light beam. Applicants respectfully traverse as discussed below as well as respectfully disagreeing with the characterization of what is disclosed and taught in the cited reference. As with the Office Action, the following makes reference to the figures and columns of the issued US patent to Aratani.

As indicated above, and as stated in the Office Action the limitations of the present invention are deemed to be an inherent characteristic of the prior art since the prior art is substantially identical in composition and/ or structure. This presumption is incorrect.

Applicants claim, claim 18, a magneto-optical recording medium comprising at least a first magnetic layer, a second magnetic layer and a third magnetic layer, which are layered in this order. The first magnetic layer of the medium is formed of a perpendicularly magnetized film having a relatively small wall coercivity and a relatively large wall mobility compared with the third magnetic layer in the vicinity of a predetermined temperature. In addition, the first magnetic layer also is composed such that, when a light beam whose intensity is controlled to be

a predetermined intensity for reproducing a signal is emitted onto the magneto-optical recording medium while the light beam being moved relatively with respect to the magneto-optical recording medium, the medium is characterized as having a larger magnetic wall coercivity at a rear part of the light beam spot than a front part of the light beam spot and so as to restrict movement of a domain wall located beyond the light beam spot rear part.

As stated in numerous places throughout Aratani, and as previously indicated by Applicants in connection with the prosecution of the subject application, the recording layer 3 is in Aratani is composed **and HAS to be composed** of FOUR (4) layers; namely a displacement layer (DS layer) 11, a second magnetic layer (YS layer) 12, a third magnetic layer (SW layer) 13 and a fourth magnetic layer (MM layer) 14. It is further stated that the YS layer 12 is expressly provided so as to inhibit the movement of the domain walls in the DS layer 11, that the SW layer is the switch layer and the MM layer is the memory layer. In addition to stating that the second layer is provided to inhibit movement of the domain walls in the displacement layer it is indicated that the YS layer is formed between the displacement layer. See Aratani col. 3, lines 39-56.

Moreover, the Abstract of Aratani clearly and unequivocally states:

To inhibit movement of the domain walls of the magnetic layer adjacent to the portion irradiated with the reproducing light, *insertion of a magnetic layer having predetermined characteristics into a space between a displacement layer and a switch layer is required.* (italics added for emphasis).

In support of the rejection, the Office Action refers to the discussion in col. 4, lines 29-37 of Aratani as describing the properties of the first magnetic layer of claim 18. The excerpt being referred to in Aratani is not that for the displacement layer but rather is a description for the fourth magnetic layer 14 or the MM layer 14 (*i.e.*, memory layer) of Aratani.

In support of the rejection, the Office Action refers to the discussion in col. 5, lines 27-33 and col. 6, lines 5-14 and Table 1 thereof of Aratani as describing the properties of the first magnetic layer of claim 18. Applicants respectfully submit that the Examiner is mixing the description in Aratani of a prior art magneto-optical recording medium with the description of the four layer magneto-optical medium that comprises the invention of Aratani. Specifically, the magneto-optical recording medium described in Aratani in col. 5, line 23 through col. 7, line 28 is that of a three-layer medium. It also is clearly stated in col. 7, lines 19-27 of Aratani that this three layer medium encounters movement of the domain walls called a ghost. It is clear from various discussions in Aratani that the so-called ghost phenomenon relates to domain wall movement whereby a signal disappears temporarily and then again appears. As described in Aratani, with the ghost phenomenon it is difficult to determine if the signal allowed to appear is the ghost signal or the signal corresponding to the next recording magnetic domain.

Thus, it is clear from the discussion in cols. 5-7, that magneto-optical medium described in these columns only has three layers and that this three-layered medium does not and cannot have the properties of the recording medium 3 listed in Table 1. This also is abundantly clear because the specific structure of the recording layer 3 described in Table 1 has FOUR (4) layers; a DS layer, a YS layer, a SW layer and a MM layer.

Furthermore, the discussion that follows in col. 7, line 29 through col. 8, lines 16 of Aratani describes the mechanism of the occurrence of the ghost with respect to the magneto-optical recording medium that has only three magnetic layer (DS layer, SW layer and MM layer). The discussion that follows in col. 8, line 17 through col. 9, line 26 of Aratani, describes the insertion of the YS layer 12 between the displacement or DS layer 11 and the switch or SW layer 13 and further describes how the addition of the YS layer 12 inhibits the movement of the domain walls in the displacement or DS layer.

In sum, the invention in Aratani is clearly directed to and discloses a magneto-optical recording medium that includes a recording layer made up of FOUR (4) layers; a displacement layer 11, a second magnetic or YS layer 12, a SW layer 13 and a MM layer 14. In contrast the magneto-optical recording medium of claim 18 comprises at least THREE (3) layers.

Also, it is clear from the discussion in Aranti that the first magnetic layer or DS layer 11 is not composed so as to prevent movement of domain walls from the front or rear portion. As such, the DS layer 11 of Aratani, does not and cannot correspond to the first magnetic layer of claim 18. In addition, it is clear form the discussion in Aratani that the YS layer 12 has a function of inhibiting movement of the domain walls of the DS layer 11. Thus, the YS layer 12 of Aratani, does not and cannot correspond to the first magnetic layer of claim 18. In other words, the DS layer 11 and the YS layer 12 in Aratani are constituted differently than that of the present invention.

As to the comment regarding figure 2 and it not showing the domain wall being located in the beam spot, Applicants would suggest that figures 7-10 in Aratani and the discussion related

thereto is more appropriate to the issue of domain wall movement and the ghost phenomenon. Basically, figures 2-6 of Aratani illustrate domain wall movement of a triple layered magneto-optical recording medium structure that is not exhibiting the ghost phenomenon.

As provided in MPEP-2131, a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegel Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Or stated another way, "The identical invention must be shown in as complete detail as is contained in the ... claims. *Richardson v Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ 2d. 1913, 1920 (Fed. Cir. 1989). Although identify of terminology is not required, the elements must be arranged as required by the claim. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990). The Federal Circuit also has indicated that in deciding the issue of anticipation, the trier of fact must identify the elements of the claims, determine their meaning in light of the specification and prosecution history, and identify *corresponding elements* disclosed in the allegedly anticipating reference (emphasis added, citations in support omitted). *Lindemann Maschinenfabrik GMBH v. American Hoist and Derrick Company et al.*, 730 F. 2d 1452, 221 USPQ 481,485 (Fed. Cir. 1984). It is clear from the foregoing remarks that the above-identified claim is not anticipated by Aratani.

It is respectfully submitted that for the foregoing reasons, claims 18 and 20-25 are patentable over the cited reference and thus, satisfies the requirements of 35 U.S.C. §102(a). As such, these claims are allowable.

35 U.S.C. §103 REJECTIONS

Claims 18, 20, 21, and 23-25 stand rejected under 35 U.S.C. §103 as being unpatentable over Fuji, et al. [USP 6,249,489, "Fuji"] in view of Aratani [WO99/39342] as evidenced by Applicants' admissions. Applicants respectfully traverse as discussed below.

Applicants refer to the description of claim 18 provided above.

In contrast to the present invention, Fuji discloses (with reference to Fig. 12A thereof) a medium that is composed of three (3) magnetic layers; a first magnetic layer 34, a second magnetic layer 35 and a third magnetic layer 36. Fuji also clearly illustrates with reference to Figures 6A,B and the discussion thereto and regarding the first embodiment, that the domain walls 58,59 of the front and rear or back positions both can move in directions D and C respectively due to the heat generated by the beam spot. It is also clear from the discussion in col. 12, lines 33-50 of Fuji that the mechanism used in Fuji to deal with mixing of signals leaking out of the so-called back region is not the way in which the first magnetic layer is constituted. Rather it is clear that the mechanism chosen in Fuji to deal with this is controlling the length of the record mark in the memory layer so that it is less than a critical value.

Fuji explains that for the signal to be read out from the back region, it is necessary that the interfacial domain wall energy accumulated becomes greater than energy necessary for nucleation to the displacement layer. However, by so limiting the length of the record mark in the memory layer so as to be less than a critical length Fuji discloses that the next magnetic domain of reversed magnetization comes before sufficient energy transfer takes place. Fuji

further indicates that, therefore, such a small magnetic domain as described above is transferred to the displacement layer at a position somewhat distant from the boundary of the back region.

The discussion regarding Figs. 12A,B and the second embodiment in Fuji also similarly indicates that the mechanism for controlling mixing of signals leaking out from the back region is the technique of controlling of the length of the record mark in the memory layer. See for example col. 11, lines 33-46 and col. 18, lines 14-25 thereof.

As indicated above in regards to the §102 rejection, Aratani discloses a four (4) layered magneto-optical recording medium that teaches insertion of the YS layer between the displacement layer and the switch layer of a three layer medium which YS layer is provided to inhibit movement of the domain walls of the displacement layer. As such, applying the teachings of Aratani to the present invention, one skilled in the art, is taught to insert a YS layer between two of the existing magnetic layers and not composing or constituting the displacement layer so that it has the functions and capabilities of both the displacement DS layer and the intermediary YS layer.

In sum, the combination of Aratani and Fuji would not yield the magneto-optical recording medium of claim 18.

As provided in MPEP 2143.01, obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. *In re Fine*, 837 F. 2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F. 2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

As provided above, Fuji and Aranti, alone or in combination, include no such teaching, suggestion or motivation.

Furthermore, and as provided in MPEP 2143.02, a prior art reference can be combined or modified to reject claims as obvious as long as there is a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Additionally, it also has been held that if the proposed modification or combination would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. Further, and as provided in MPEP-2143, the teaching or suggestion to make the claimed combination and the reasonable suggestion of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). As can be seen from the forgoing discussion regarding the disclosures of the cited references, there is no reasonable expectation of success provided in the reference(s). Also, it is clear from the foregoing discussion that the modification suggested by the Examiner would change the principle of operation of the medium and methodology disclosed in Fuji.

As provided in MPEP-2145 (XD) a prior art reference that "teaches away" from the claimed invention is significant factor to be considered in determining obviousness. It also is provided therein that the totality of the prior art must be considered, and proceeding contrary to accepted wisdom in the art is evidence of non-obviousness. *In re Hedges*, 783 F.2d 1038, 228 USPQ 685 (Fed. Cir. 1986).

As provided in pertinent part in MPEP-2144.04, the omission on an element and the retention of its function is an indicia of unobviousness citing to *In re Edge*, 359 F. 2d 896, 149 USPQ 556 (CCPA 1966). As such for example, it cannot be said that the elimination of the YS layer in Aratani and the incorporation of the functionality of this layer in the displacement layer would have been obvious to one skilled in the art.

As the Federal circuit has stated, “[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.” *In re Fritch*, 972 F.2d 1260,1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992). Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor. *Para-Ordance Mfg. v. SGS Importers Int’l, Inc.*, 73 F.2d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995).

It is respectfully submitted that for the foregoing reasons, claims 18, 20, 21, and 23-25 are patentable over the cited reference(s) and thus satisfy the requirements of 35 U.S.C. §103. As such, these claims as well as the claims dependent therefrom are allowable.

DRAWING OBJECTIONS

The Examiner objected to the drawing figures because Figs. 8-10 thereof did not include a prior art legend and requested correction. Attached herewith are replacement sheets including Figs. 8-18 in which the drawing figures were amended to add the prior art legends as requested by the Examiner. As such the as-amended drawing figures are considered acceptable.

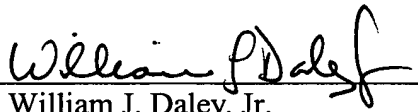
Inventor: N. Iwata, et al.
U.S.S.N. 09/990,428
RESPONSE TO OFFICE ACTION
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It is respectfully submitted that the subject application is in a condition for allowance.
Early and favorable action is requested.

Applicants believe that additional fees are not required for consideration of the within
Response. However, if for any reason a fee is required, a fee paid is inadequate or credit is owed
for any excess fee paid, the Commissioner is hereby authorized and requested to charge Deposit
Account No. **04-1105**.

Respectfully submitted,
Edwards & Angell, LLP

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Amendment to the Drawings

The attached sheet(s) of drawings includes changes to Fig(s). 8-10. These sheets, which includes Figs.8-10, replace the original sheet(s) including these figures.